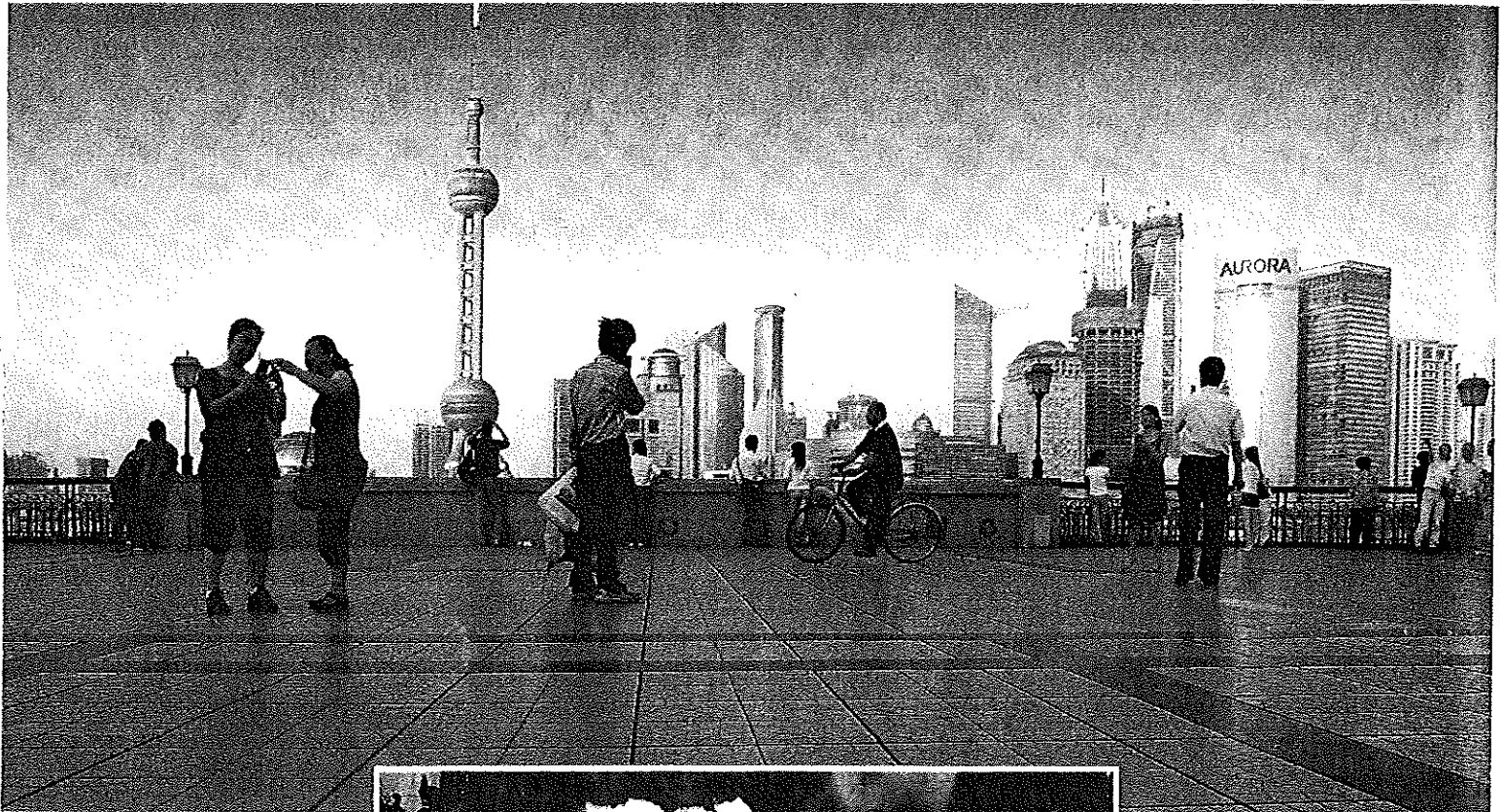


# Learning from World-Class

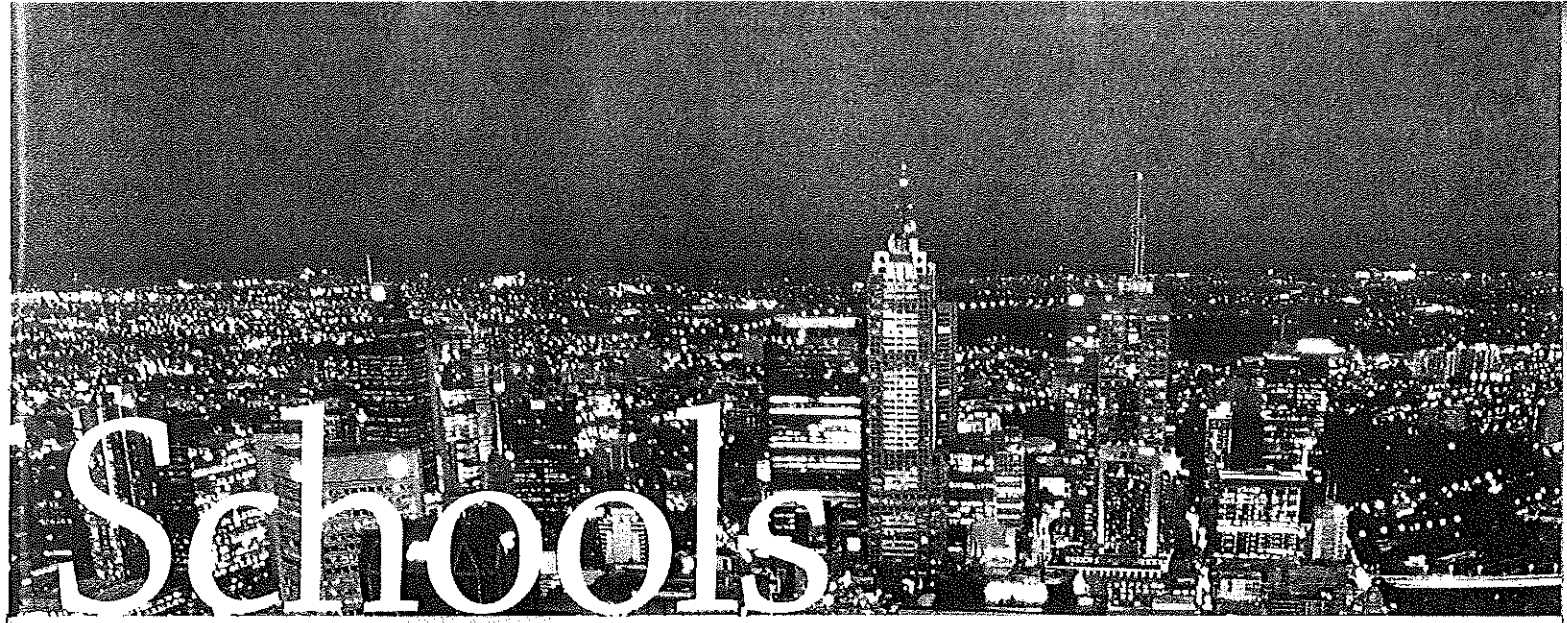


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Above, people standing in front of Pudong skyline in Shanghai, China. At right, a pedestrian street in Copenhagen, Denmark. At far right, Melbourne skyline in Victoria, Australia.



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*An increasing number of countries are setting a new standard of educational excellence. Here's what we can learn from them.*

**Andreas Schleicher and Vivien Stewart**

In a flat world, where everything is interconnected, relevant educational standards of excellence are no longer those of the city or state next door. Work that can be digitized, automated, and outsourced can now be done by anyone from any place in the world (Friedman, 2005). Countries that invest heavily in education to meet the demands of the new global knowledge economy benefit economically and socially from that choice.

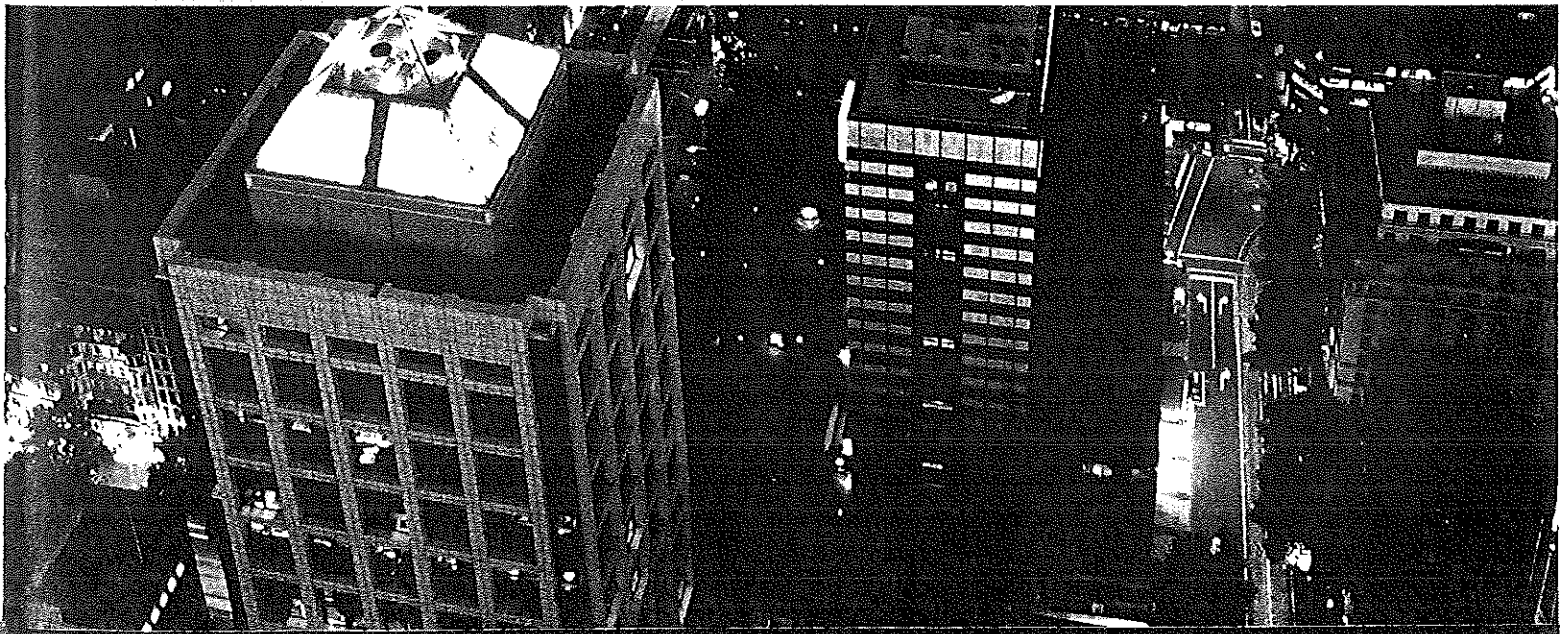
Educators and governments are

therefore paying increasing attention to international comparisons as they seek to develop effective policies to improve the performance of their education systems. The most comprehensive international benchmarks are those of the Organization of Economic Cooperation and Development (OECD), an organization of 30 member countries, including the United States. OECD's regular indicators enable policymakers to see their education systems in light of other countries' performance.

#### **The World Is Catching Up**

In the second half of the 20th century, the United States set the world standard of excellence. It was the first country to pursue and achieve mass secondary education and mass higher education. As a result, it has the largest supply of highly qualified people in its adult labor force of any country in the world. This stock of human capital has helped the United States become the dominant economy in the world and take advantage of the globalization and

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fostering independent and lifelong learning among students. Obviously, such personalized learning demands a curriculum that provides both breadth of study and personal relevance.

Some countries also show that excellence can become a consistent and predictable education outcome: In Finland, the country with the strongest overall results in PISA, the performance variation among schools amounts to only 5 percent of students' overall performance variation. Parents can rely on high and consistent performance standards in whatever school they choose to enroll their children.

## High-performing countries have moved toward a professionalized model of teachers as knowledge workers.

### So What Does It Mean?

Some people criticize international education comparisons, such as PISA, pointing out that the United States has had mediocre performance on international tests since *A Nation at Risk* first issued its warning in 1983—but that the country has still prospered economically. Although this observation is true in some respects, it fails to take into account the time lag involved between a nation's stock of human capital and its economic output. Also, the United States has an extremely favorable economic “enabling environment” of legal and banking systems, a large supply of capital, a culture of freedom, and systems that support entrepreneurialism. These factors can, to some extent, compensate for weaker K–12 education systems (Asia Society, 2007; Hanushek, 2008). However, although the U.S.

economy has grown overall, large sectors have moved irreversibly to other parts of the world.

The overarching reality is that in today's world, a global marketplace of ideas exists in every field, including education. No nation has a patent on excellence. All are striving to modernize their education systems to meet the demands of the global knowledge economy and produce a new global skill set.

The United States has much to offer in these discussions—from its research on child development, to its institutional and instructional innovations, to

its more “creative” culture. It also has much to learn from other countries in which educational excellence is more systemic. Success will go to those countries that are swift to adapt, slow to complain, and open to change (Schleicher, 2006). ■

<sup>1</sup>For a description of the education systems in two top performers in international assessments—Finland and Singapore—see “Two Roads to Success” on page 26.

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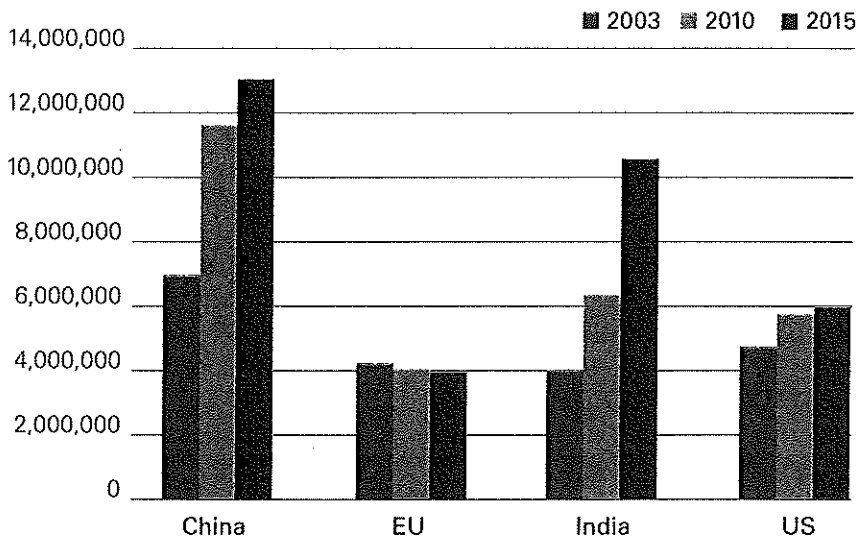
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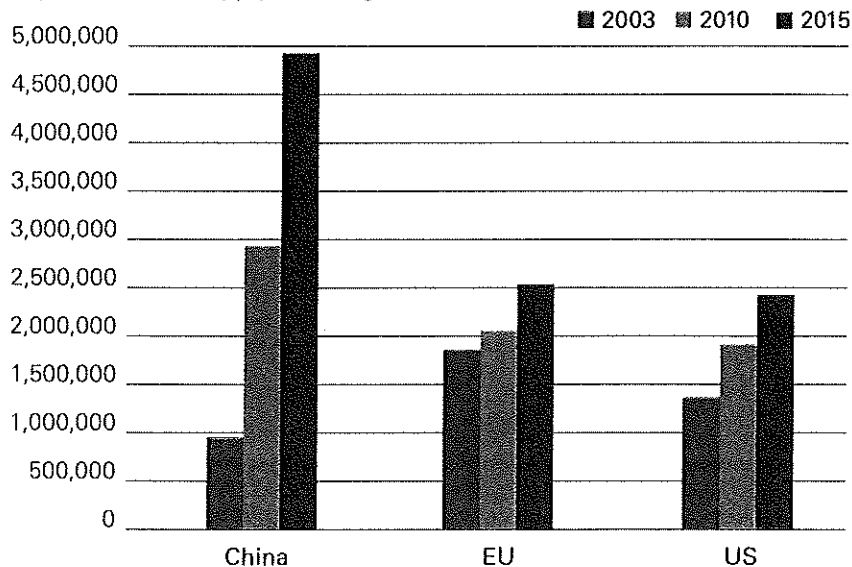
**FIGURE 2: Graduation Projections**

**Projected Future Supply of High School Graduates**



Source: From "Education and the Knowledge Economy in Europe and Asia," by A. Schleicher and K. Tremblay, September 2006, *Challenge Europe*. Copyright 2006 by the European Policy Center. Available: [www.international.org/publications/EducationKnowledgeEconomy.pdf](http://www.international.org/publications/EducationKnowledgeEconomy.pdf). Reprinted with permission.

**Projected Future Supply of College Graduates**



Source: From *Education at a Glance 2007: OECD Indicators*, 2007, Paris: OECD. Copyright 2007 by OECD. Reprinted with permission.

professional development, and changing the distribution of decision making in education. As a result, the country experienced three-quarters of a year's growth in its reading scores on PISA by 2006. East Asian systems such as those in Japan, Korea, Hong Kong, and Taipei, Taiwan, are relatively meritocratic; students' socioeconomic background has little effect on students' success. In

**Excellence can  
become a consistent  
and predictable  
education outcome.**

Finland, multiple levels of academic and social support both inside the classroom and outside the school ensure that no child falls far behind. Some European countries with large immigrant populations—such as Switzerland and Lichtenstein—are more successful than the United States in educating immigrant students, particularly in the second generation. More generally, there is no correlation between a country's share of immigrant students and its performance on the PISA assessment.

Many of the high-performing systems are seeking to move from prescribed forms of teaching, curriculum, and assessment toward an approach predicated on enabling all students to reach their potential. Of course, many schools and teachers in the United States have tailored curriculum and teaching methods to successfully meet their students' needs. However, what distinguishes the education systems of, for example, Victoria in Australia, Alberta in Canada, or Finland is the drive to make such practices systemic by establishing clear learning pathways and

of each “key stage.” In South Korea, Japan, and China, everything is clearly aligned to the standards, from teacher preparation and professional development to textbooks (Asia Society, 2006).

Whatever the format, national or common standards cannot drive change by themselves, nor should they just sit on a shelf. They must be understood and supported throughout the education system by teachers, schools, students, teacher-training institutions, and education publishers.

#### **Key Feature 2:**

##### ***Accountability and Autonomy***

Many successful education systems couple the focus on universal standards and outcomes with efforts to move responsibility to the front line, encouraging responsiveness to local needs and strengthening accountability systems. In fact, in most of the countries that performed well in PISA—such as Canada, Finland, and Japan—schools now have substantial autonomy with regard to adapting and implementing education content and allocating and managing resources. The strongest effects on outcomes seem to be where schools have substantial control over two key areas—budgeting and hiring.

There are also striking differences in approaches to accountability. In recent years, the United States has focused heavily on external test-based accountability. Asian systems rely on external examinations, and England has focused on the use of pupil performance data, school inspections, and value-added analyses. By contrast, Denmark and Finland, with their focus on formative assessment and school self-evaluation, rely less on external accountability mechanisms and more on building capacity for and confidence in professional accountability. The primary purpose of any systematic assessment of school performance in these countries is

to reveal best practices and identify shared problems in order to encourage teachers and schools to develop more supportive and productive learning environments.

#### **Key Feature 3:**

##### ***Strengthened Teacher Professionalism***

High-performing countries recruit strong teacher candidates, promote sound subject-matter preparation, offer induction programs that support new teachers during their first few years of teaching, and offer ongoing professional development. These countries are aban-

doning the traditional factory model, with teachers at the bottom of the production line receiving orders from on high, to move toward a professionalized model of teachers as knowledge workers. In this model, teachers are on a par with other professionals in terms of diagnosing problems and applying evidence-based practices and strategies to address the diversity in students' interests and abilities. Countries vary in the extent to which they use higher salaries as an incentive (for example, Korea does, Finland doesn't); open the market to new teacher-training providers (as in England); and make tradeoffs between class size and time for professional development (McKinsey & Co., 2007).

Singapore<sup>1</sup> is an excellent example of best practices. Singapore recruits teachers from the top 30 percent of each high school class, provides financial support for their initial training, gives teachers 100 hours per year of profes-

#### **Key Feature 4:**

##### ***Personalized Learning***

In all school systems, there is a correlation between student socioeconomic status and performance, but systems vary enormously in the extent to which socioeconomic status predicts such performance. In virtually all the countries that performed well in PISA, schools and teachers are responsible for

engaging constructively with the diversity of student interests, capacities, and socioeconomic contexts. They don't have the option of making students repeat the school year—retention is not permitted—or of transferring students to schools with lower performance requirements. Even where retention or transfers are technically possible, the incentive structures for teachers and schools encourage teachers to address and solve challenges rather than hand them to others. The mechanisms for this vary. In Sweden, for example, school funding formulas link additional resources to the magnitude of the challenges that schools face; in Finland, schools organize more than one-fifth of student learning time outside formal classroom settings.

Although not yet a top performer, Poland underwent a significant reform of its school system in 1999, which included delaying stratification to age 16, reorganizing teacher support and

**There is no correlation between a country's share of immigrant students and its performance on the PISA assessment.**



higher percentage of students in the top two proficiency levels, but even the highest-scoring 10 percent of U.S. students were outperformed by their OECD counterparts.

■ **Reading.** In 2003, the United States ranked 15th of 29 OECD countries in reading literacy, with its score of 495 coming in near the OECD average of 500 (Lemke et al., 2005). A printing error invalidated the U.S. section of the 2006 PISA assessment, so the current U.S. standing is unknown.

### So What Characterizes Excellence?

Perhaps the most important lesson we can learn from international comparisons is that strong performance and improvement are always possible. Countries such as Japan, Korea, Finland, and Canada display strong

overall performance and, equally important, show that a disadvantaged socioeconomic background does not necessarily result in poor performance in school.

One thing is clear: Performance is not simply a matter of money, because only Luxembourg, Switzerland, and Norway spend more per student than the United States.

So what might we learn from high-performing nations that achieve more with less? The following key features play a substantial role in preparing these countries to meet the world's new definition of excellence.

#### Key Feature 1:

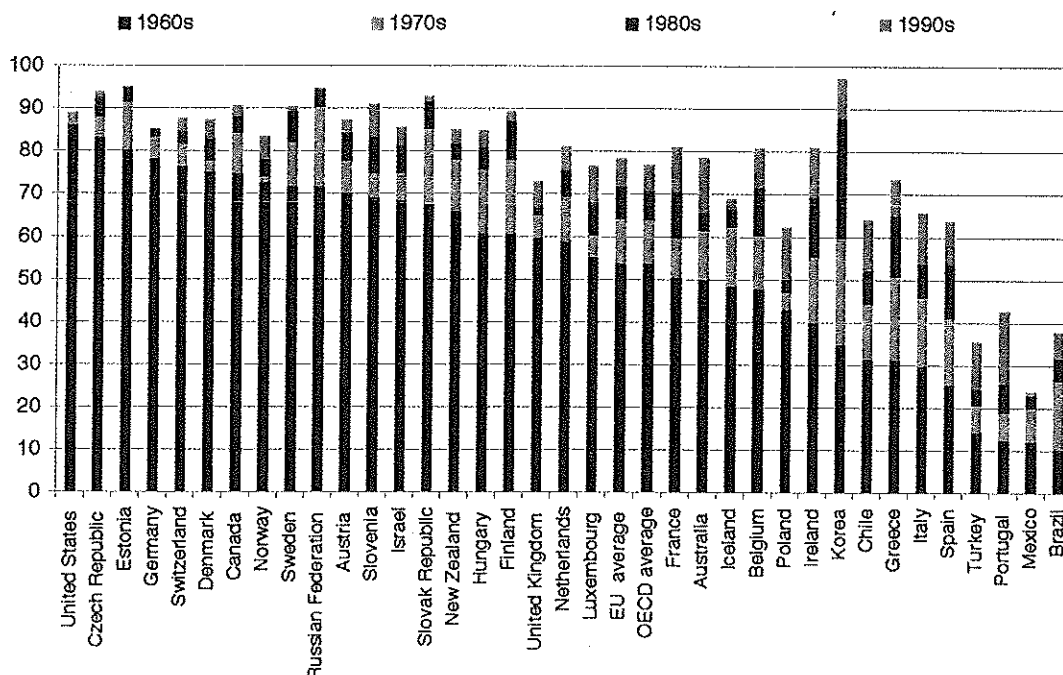
##### High Universal Standards

Many countries have shifted away from control over education content to a focus on outcomes. This has driven

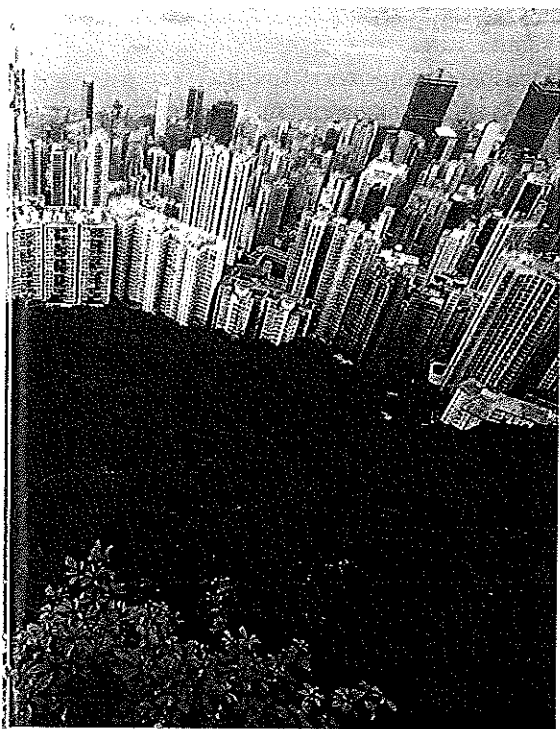
efforts to more clearly articulate learning outcomes and translate these expectations into national education goals and standards. By setting national standards, countries seek to raise aspirations and define educational excellence, make educational objectives transparent to students, and provide a framework for teachers while avoiding the risks of narrowing the curriculum and teaching to the test.

Countries vary, however, in how they achieve these key features. Some countries, like Finland, have broad standards and give teachers a great deal of discretion regarding how to reach them. Others have also introduced performance benchmarks that students at particular ages or grade levels should reach en route to mastery of the standards. England, for example, defines average student performance at the end

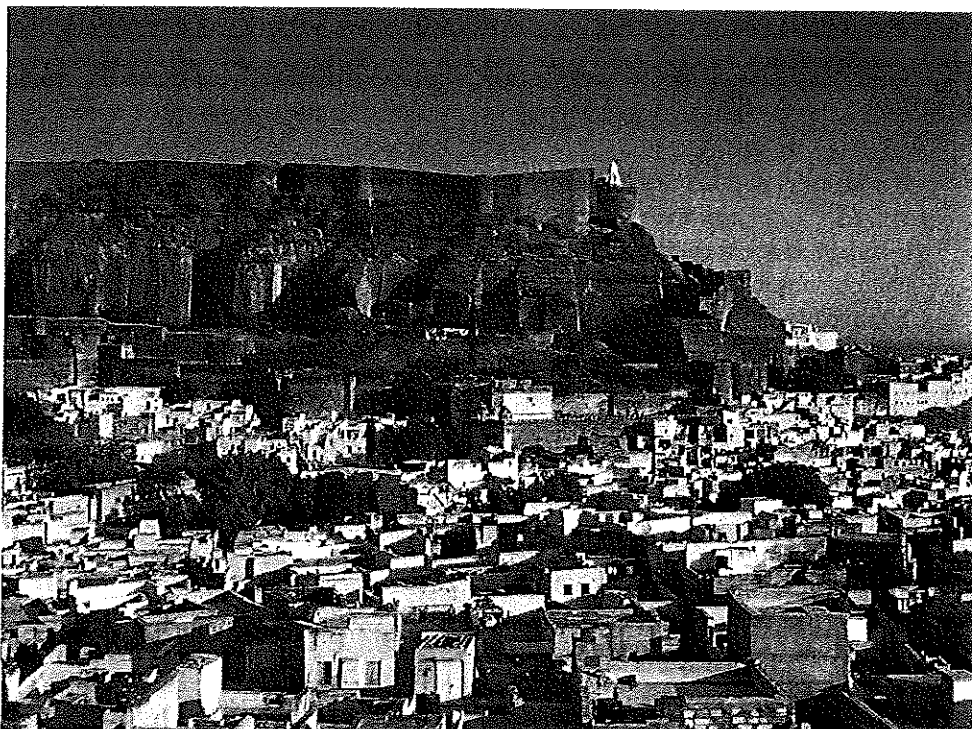
**FIGURE 1: Percentage of People with High School or Equivalent Qualifications**



Source: *Education at a Glance: OECD Indicators*, 2008, Paris: OECD. Copyright 2008 by OECD. Reprinted with permission.



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The Blue City of Jodhpur, Rajasthan State, India

## In rapidly changing knowledge economies, critical thinking and problem solving are important parts of the new global skill set.

economy took the PISA tests. Representative samples of between 3,500 and 50,000 15-year-old students take the test in each country. More than 400,000 students participated in the 2006 PISA, representing 20 million 15-year-olds. China is already participating in PISA on a pilot basis, and India is considering participation.

The PISA tests focus on the key subject areas of reading, mathematics, and science. They seek to assess not merely whether students can reproduce what they have learned, but also how well they can apply this learning to new settings. This reflects the increasing understanding that in rapidly changing knowledge economies, critical thinking

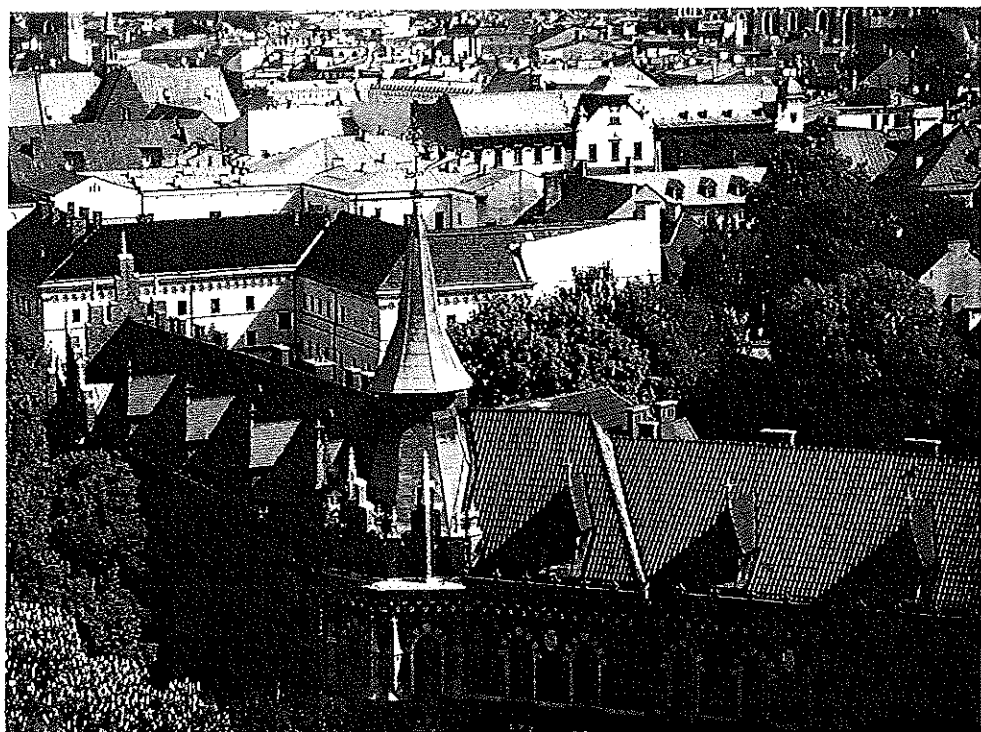
and problem solving are important parts of the new global skill set, whereas the labor market demand for routine cognitive competencies—the kinds of skills that are easy to teach and test—has declined rapidly over recent decades.

Each country's score is an average of all students' scores in that country, and countries are ranked according to the average score of their students in each subject:

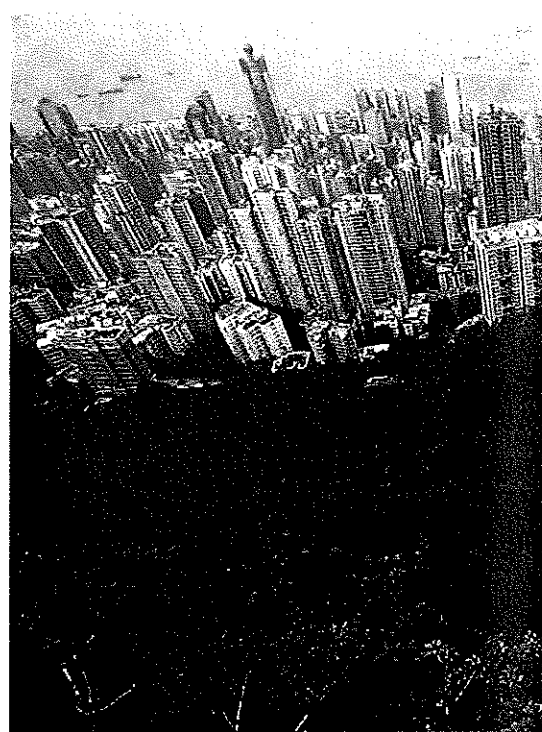
■ **Science.** The United States ranks 21st of 30 OECD countries in science; the U.S. score of 479 fell well below the OECD average of 500. One-quarter of U.S. students did not reach the baseline level that will enable them to use science and technology in life situations.

Although the United States does have an average level of top performers, it also has a much larger proportion than other countries of students who perform at the lowest levels. The difference in science scores between students from different socioeconomic backgrounds is larger in the United States than in almost any other country (OECD, 2007b).

■ **Math.** In 2006, the United States ranked 25th of 30 OECD countries in math; the U.S. score of 474 was significantly below the OECD average of 498. U.S. scores have changed little since 2003. More than one-quarter of U.S. 15-year-olds performed below the baseline level. The United States had a



Krakow, Poland from Wawel Castle



Hong Kong and Victoria Harbor from Hong Kong Trail

expansion of markets.

However, what was once the gold standard—high school graduation—has now become the norm in most industrialized countries. According to the 2006 OECD data, the United States has fallen from 1st to 10th in the proportion of young adults with a high school degree or equivalent (including GED qualifications)—not because U.S. high school graduation rates dropped but because graduation rates rose so much faster elsewhere (see fig. 1). Looking at graduate output, the United States ranks only 18th among the 24 OECD countries with comparable data, with countries like Finland, Germany, Japan, and South Korea more than 15 percentage points ahead (OECD, 2008).

South Korea illustrates the pace of progress that is possible (Uh, 2008). Two generations ago, the country had the economic output of Afghanistan today and ranked 24th in education

output among the current 30 OECD countries. Today, South Korea is the world's top performer in secondary school graduation rates, with 93 percent of an age cohort obtaining a high school degree, compared with 77 percent in the United States (OECD, 2008).

Although the United States has a strong higher education system compared with most other countries, here, too, other countries are passing the United States in the proportion of students completing college. The United States ranked second in 1995; by 2006, it ranked 13th among 24 countries with comparable data, behind such countries as Australia, Iceland, New Zealand, Finland, Denmark, Poland, the Netherlands, and Italy—and, for the first time, even behind the OECD average. In the United States, only 54 percent of those who enter college complete a degree, compared with the OECD average of 71 percent and Japan's impressive 91 percent.

The challenge to the United States has just begun. Looking ahead to 2015, the U.S. proportion of the global talent pool will shrink even further as China and India, with their enormous populations, rapidly expand their secondary and higher education systems (see fig. 2). Moreover, a larger proportion of these graduates will be in science and engineering (Asia Society, 2007).

### Lagging U.S. Scores

Another important set of indicators of education quality are OECD's measures of academic proficiency that show how 15-year-olds in the United States compare academically with 15-year-olds in other countries. Use of the Programme for International Student Assessment (PISA) has grown far beyond the 30 advanced-economy member countries of OECD; in 2006, 58 countries (OECD 2007a) that make up close to 90 percent of the world's